

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Currently Amended) A ~~An imaging system comprising:~~

—— a thermal imaging based system adapted for imaging infra-red radiation that is emitted by a black body, the thermal imaging based system comprising:

—— a focal plane array (FPA) having a plurality of pixels sensitive to infra-red radiation; ~~and~~

—— a lens disposed between the black body and the FPA and adapted to focus the infra-red radiation emitted by the black body in front of the lens onto the FPA behind the lens, the plurality of pixels of the FPA having sufficient infra-red sensitivity so as to detect the infra-red radiation emitted by the black body as well as infra-red radiation emitted by the lens;

a shutter located between ~~the thermal imaging based system and the lens~~ and the black body, the shutter having a closed state and an open state wherein the closed state prevents the infra-red radiation emitted by the black body from ~~entering the thermal imaging based system, and allows internal radiant flux of the thermal imaging based system to reach the plurality of pixels of~~ reaching the FPA while allowing the infra-red radiation emitted by the lens to be detected by the FPA as a reference image signal, and the open state allows an open state image signal that includes both the infra-red radiation emitted by the black body and the infra-red radiation emitted by the lens to be detected by internal radiant flux of the thermal imaging based system to reach the plurality of pixels of the FPA as an open state image signal; and

a signal processing module operatively coupled to the FPA, and adapted to correct the open state image signal based on the reference image signal.

Claim 2. (Original) The system of claim 1 further comprising:

a shutter controller operatively coupled to the shutter, and adapted to command the shutter to its opened and closed states.

Claim 3. (Original) The system of claim 2 further comprising:

a system controller communicatively coupled to the shutter controller and the signal processing module, and adapted to control operation of the imaging system.

Claim 4. (Original) The system of claim 3 where the system controller is communicatively coupled to a network thereby enabling the imaging system to communicate with other systems also communicatively coupled to the network.

Claims 5 - 7. (Canceled)

Claim 8. (Previously Presented) The system of claim 1 wherein for any one session of imaging system operation, each of a plurality of open state image signals are corrected for pixel-to-pixel non-uniformities and offset based on the open and closed state image signals.

Claim 9. (Original) The system of claim 1 wherein the closed state image signal is periodically generated to account for changes in the imaging system.

Claim 10. (Currently Amended) A method for thermally imaging a black body, comprising:

providing

——a thermal imaging based system configured with a lens; ~~[[and]]~~ a focal plane array (FPA), the FPA having sufficient infra-red sensitivity so as to detect infra-red radiation emitted by the black body as well as infra-red radiation emitted by the lens;
and

——a shutter, the shutter being disposed between the ~~thermal imaging based system~~ lens and the black body;

closing the shutter so that the infra-red radiation emitted by the black body is blocked from entering the thermal imaging based system and being focused by the lens ~~onto~~ reaching the FPA;

generating a closed state image signal that includes internal radiant flux of the thermal imaging based system ~~the infra-red radiation emitted by the lens~~;

opening the shutter, thereby allowing the infra-red radiation ~~received from~~ emitted by the black body to ~~enter the thermal imaging based system and be focused by the lens~~ reach the FPA;

generating an open state image signal ~~based on that includes both~~ the received infra-red radiation emitted by the black body and the ~~internal radiant flux of the thermal imaging based system~~ infra-red radiation emitted by the lens; and

correcting the open state image signal based on the closed state image signal.

Claim 11. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for pixel-to-pixel non-uniformities of the FPA.

Claim 12. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for offsets between the opened and closed states of the shutter.

Claim 13. (Previously Presented) The method of claim 10 wherein correcting the open state image signal includes compensating for pixel-to-pixel non-uniformities and offsets between the opened and closed states of the shutter.

Claim 14. (Canceled)

Claim 15. (Currently Amended) A method for manufacturing an imaging system adapted for imaging infra-red radiation emitted by a black body, the method comprising:

providing a thermal imaging based system comprising a lens and a thermal imaging detector array, the lens being adapted to focus infra-red radiation emitted by the black body onto the thermal imaging detector array, the thermal imaging detector

array having sufficient sensitivity to detect the infra-red radiation emitted by the black body, as well as infra-red radiation emitted by the lens; and

providing a shutter located between the black body and the ~~thermal imaging based system lens~~, the shutter having a closed state that prevents the infra-red radiation received from emitted by the black body from entering the thermal imaging based system and allows reaching the lens while allowing the thermal imaging detector array to generate a closed state image signal comprising the infra-red radiation emitted by the lens internal radiant flux of the thermal imaging based system, and an open state that allows the detector array to generate an open state image signal comprising both the infra-red radiation emitted by the lens internal radiant flux and the infra-red radiation emitted by received from the black body .

Claim 16. (Previously presented) The method of claim 15 wherein the detector array comprises a plurality of pixels for detecting the infra-red radiation; the method further comprising:

operatively coupling a signal processing module to the detector array, the signal processing module being adapted to correct open state image signals based on closed state image signals.

Claims 17 - 20. (Canceled)

Claim 21. (Previously Presented) The method of claim 16 further comprising:

operatively coupling a shutter controller to the shutter, the shutter controller adapted to command the shutter to its opened and closed states.

Claim 22. (Previously presented) The method of claim 15 further comprising:

operatively coupling a system controller to a shutter controller and a processing module, the system controller being adapted to control operation of the imaging system.

Claim 23. (New) The system of claim 1, wherein the shutter has a lens side surface that is located within five millimeters of a front side of the lens

Claim 24. (New) The system of claim 1, wherein the shutter has a lens side surface that is located within one millimeter of a front side of the lens